Claims

1. Capture device of the orientation of a solid comprising:

- at least a sensor(10a, 10b) of angular position, capable of being made solid with the solid and of supplying at least a measuring datum (Θ_m) representative of the orientation of the solid,
- means (14) for generating test data (Θ_t) representative of an estimated orientation of the solid,
- means (18) for modification of the estimated orientation of the solid by confrontation of the measuring datum and test data.

2. Device as claimed in Claim 1, wherein the modification means (18) of the estimated orientation comprise a first comparator (12) connected to the sensor (10a, 10b) and to the means (14) for generating test data, for receiving the measuring datum and at least a test datum, and for establishing at least a difference ($\Delta\Theta$) between the test datum and the measuring datum.

3. Device as claimed in Claim 2, further comprising a second comparator with threshold (16) for comparing the difference established by the first comparator (12) to a threshold value (th) and to validate the estimated orientation, when the difference established by the first comparator is less than the threshold value.

4. Device as claimed in Claim 1, comprising at least an angular position sensor (10b) sensitive to the gravity and at least an angular position sensor (10a) sensitive to a magnetic field.

5. Device as claimed in Claim 4, wherein the sensor sensitive to gravity comprises at least an accelerometer and the sensor sensitive to a magnetic field comprises at least a magnetometer.

6. Device as claimed in Claim 4, comprising two sensors each having three axes of sensitivity.

7. Device as claimed in Claim 1, wherein the means (14) for generating test data comprise a calculator for calculating test data as a function of an estimated orientation, and as a function of parameters characteristic of a response of the angular position sensor.

8. Device as claimed in Claim 7, wherein the calculator is localised on the solid.

9. Device as claimed in Claim 1, wherein the modification means (18) of the estimated orientation and/or the means for generating a test datum comprise a calculator for establishing a new estimated orientation and/or a new test datum according to a method known as error gradient descent.

10. Device as claimed in Claim 9, wherein the calculator is localised on the solid.

11. A motion capture device of the rotation of a solid comprising a capture device of the orientation, as claimed in claim 1 and means (M) for registering successive estimations of the orientation of the solid.

12. Device as claimed in Claim 11, wherein the means (M) for registering are localised on the solid.

13. Device as claimed in Claim 11, comprising a timer (H) for rating the registration of the successive estimations of the orientation of the solid.

14. A process for estimation of the orientation of a solid comprising the following stages:

a) capture of measuring data originating from at least one angular position sensor (10a, 10b) and the establishment of a test datum representative of an estimated orientation of the solid,

b) confrontation of the test datum and the measured datum,

c) establishment of a new test datum representative of a new estimated orientation of the solid, corrected as a function of the preceding confrontation,

d) repetition of stages b) and c).

15. Process as claimed in Claim 14, wherein the stages b) and c) are repeated until the confrontation reveals a difference between the test datum and the measuring datum less than a determined threshold.

16. Process as claimed in Claim 14, wherein, during stage c), correction calculation is made according to a method known as error gradient descent.

17. Process as claimed in Claim 14, wherein confrontation test data and the measuring datum comprises the establishment of difference data ($\Delta\Theta$) between successive test data and the measuring datum.

18. Process of motion capture of a solid, characterised in that the process as claimed in Claim 14 is repeated with successive measuring data.